1. A method for optimizing response time of physical devices
in a data storage system comprising:

     collecting statistics for each of the physical devices;

     determining from the statistics the n most active of the
physical devices;

     for each of the n most active of the physical devices,
adjusting a mirror service policy associated with one or more
mirrored logical volumes serviced by the physical device to
reduce seek time.

2. The method of claim 1, wherein the statistics include
utilization and wherein adjusting is performed if the
utilization of the physical device is greater than a threshold
value.

3. The method of claim 1, wherein adjusting comprises:

     using a cost function analysis to determine that workload
assigned to the one or more selected mirrored logical volumes
according to a current mirror service policy can be re-assigned
to a corresponding mirrored copy according to a new mirror
service policy, the cost function analysis indicative of seek
time and involving the selected physical device and any physical
device on which a mirrored copy resides.

4. The method of claim 3, wherein the physical devices
involved in the cost function analysis are physical mirrors.

1 5.   The method of claim 3, wherein using comprises:

2   computing cost functions for each of the physical devices

3 involved in the cost function analysis and determining a maximum

4 value from the computed cost functions, based on the current

5 mirror service policy and the new mirror service policy.

1 6.   The method of claim 5, wherein using comprises:

2   determining that the reassignment of workload can be made

3 if the maximum value based on the new mirror service policy is

4 less than the maximum value based on the current policy.

1 7.   The method of claim 6, wherein adjusting comprises

2 processing the one or more logical volumes in a sequence

3 beginning with the outermost logical volume bordering logical

4 volumes serviced by another physical device.

1 8.   The method of claim 7, wherein, for each successive one

2 of the processed logical volumes, the new mirror service policy

3 of an immediate predecessor of the processed logical volumes is

4 used as the current mirror service policy for the cost function

5 analysis.

1 9.   The method of claim 2, wherein the threshold value

2 comprises fifty percent.

1 10.   A computer program product residing on a computer

2 readable medium for optimizing response time of physical devices

3 in a data storage system, comprising instructions for causing a

4 computer to:

5   collect statistics for each of the physical devices;

6   determine from the statistics the n most active of the

7   physical devices;

8   for each of the n most active of the physical devices,

9   adjust a mirror service policy associated with a mirrored

10   logical volume serviced by the physical device to reduce seek

11   time.

1   11.   A data storage system comprising:

2   physical devices having mirror logical volumes stored

3   thereon;

4   a storage controller for controlling access to the

5   physical devices; and

6   wherein the storage controller collects for the physical

7   devices statistics including utilization and, for each of n of

8   the most active of the physical devices, adjusts mirror service

9   policy associated with a mirrored logical volume serviced by the

10   physical device to minimize seek time when the utilization is

11   greater than a threshold value.